



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

UC-NRLF



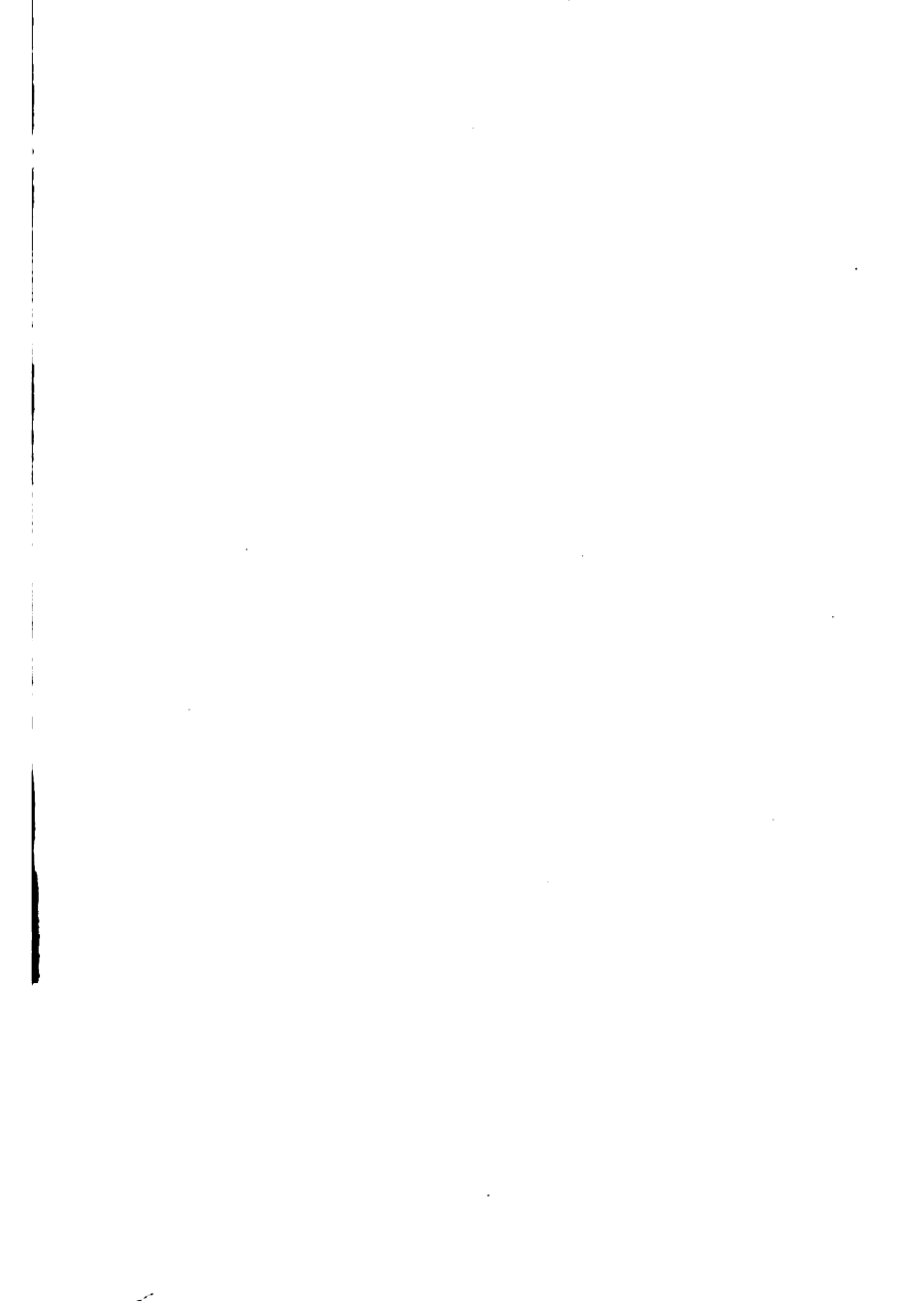
5B 276 371

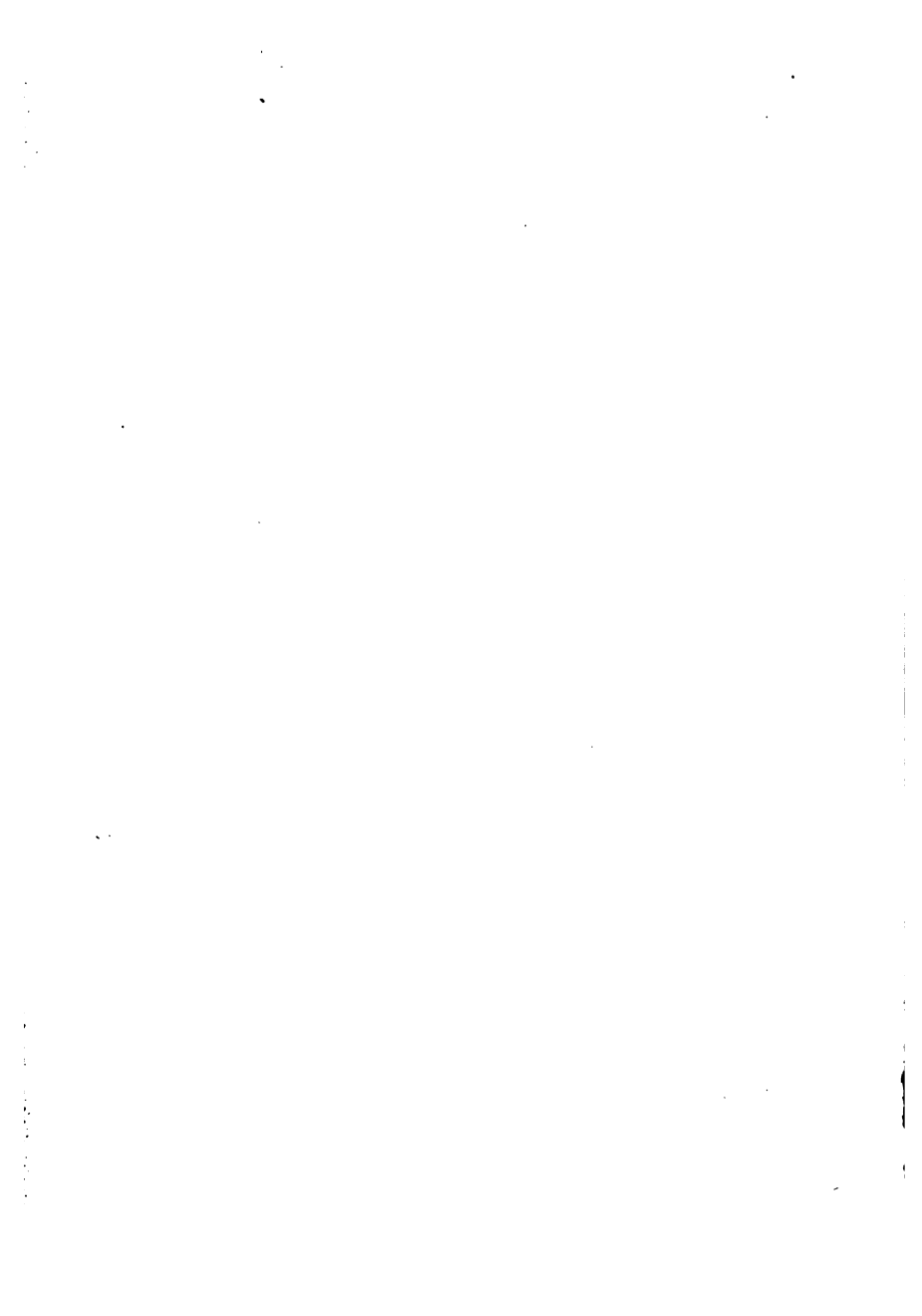
YB 15260











APPROVED METHODS *for* HOME LAUNDERING.

By MARY BEALS VAIL

Of two countries, with an equal amount of population, we may declare with positive certainty that the wealthiest and most highly civilized is that which consumes the greatest weight of soap.—LIEBIG.

PUBLISHED BY
THE PROCTER & GAMBLE CO.
CINCINNATI, O.

1

COPYRIGHT 1906
THE PROCTER & GAMBLE CO.,
CINCINNATI, OHIO.

200-519
(100)

NO. 1111
AUG. 10.

TABLE OF CONTENTS

INTRODUCTORY

VALUE OF LAUNDRY WORK, - - - - -	7
----------------------------------	---

PURIFIERS

SUN, - - - - -	7
AIR, - - - - -	8
WATER, - - - - -	8
CHEMICAL, - - - - -	9
MECHANICAL, - - - - -	9

STAINS

INSTRUCTIONS FOR TAKING OUT, - - - - -	11-15
--	-------

FABRICS

COTTON, - - - - -	16
LINEN, - - - - -	16
WOOL, - - - - -	17
SILK, - - - - -	17

SOAPS

IVORY, - - - - -	19
LENOX, - - - - -	19
P. & G. NAPHTHA, - - - - -	19
SOAP SOLUTION, - - - - -	20

LAUNDRY AIDS

STARCH, - - - - -	21
BLUING, - - - - -	23
WAX, - - - - -	25
REAGENTS, - - - - -	25

EQUIPMENT FOR HOME LAUNDRY

LIST OF ARTICLES NEEDED, WITH PRICES, - - - - -	26-37
---	-------

PRACTICAL LAUNDRY WORK

PLAN OF WEEK'S WORK, - - - - -	38-39
ORDER OF DAY'S WORK, - - - - -	39-40
WHITE CLOTHES, - - - - -	41-56
THICK STARCHING, - - - - -	57-61
CLEAR STARCHING, - - - - -	61
COLORLED CLOTHES, - - - - -	62
HOSIERY, - - - - -	63
WOOL, - - - - -	63-66
SILK, - - - - -	66
LACES AND CURTAINS, - - - - -	67-68

PUBLISHER'S PREFACE

THIS booklet is published by The Procter & Gamble Co., of Cincinnati, Ohio.

It is believed to be the most complete as well as the most reliable publication ever issued dealing with the problems of home laundering.

The information it contains is of value to experienced as well as inexperienced housewives.

The firm of Procter & Gamble was established in 1837. The Procter & Gamble Co. was incorporated in 1890. Its Ivorydale, Ohio, plant is the largest soap factory in the United States. Branch factories are located at Kansas City, Kan., and at Arlington, Staten Island, N. Y.

Of the many brands of soap made by The Procter & Gamble Co., at least three are known from one end of the country to the other—"Ivory," "Lenox" and "Procter & Gamble (P. & G.) Naphtha Soap."

Each of these soaps has a field of its own.

Ivory is used for the bath and toilet as well as for such other purposes as require a mild, neutral and absolutely pure soap—a soap which, because it contains no "free" (uncombined) alkali, can be used without hesitation for cleansing articles for which ordinary laundry soaps are unsafe and unsatisfactory.

Lenox is one of the best and, at the same time, one of the cheapest of laundry soaps. It can be used for every purpose for which a high grade, well made, laundry soap should

be used. There are cheaper laundry soaps than Lenox. But it does not pay to use them. Many of them are badly made. Some of them are positively harmful. None of them is as good as Lenox. For every day use around the house, it is without an equal.

P. & G. Naphtha Soap simplifies the work of laundering to an extent that is almost beyond belief. Use it and you will have no more "Blue Mondays," no more hot kitchens, no more backaches from bending over tubs of steaming water, no more hard rubbing of clothes up and down the washboard. Time, labor, fuel and money saved—and cleaner clothes than you have ever had before.

THE VALUE OF LAUNDRY WORK —PURIFIERS

THE one great privilege of rich and poor alike is the possession of clean clothes. Water is free, soap is cheap, and sunshine and fresh air are everywhere. For centuries we have been training ourselves to like the "feel" of clean, smooth garments, the odor of freshly laundered linen, and the appearance of clothes clean and uniform in color, free from wrinkles, and straight as to threads of material. We may not have known that this very cleanliness is the strongest supporter of good health, but it is. The skin is made more active by the fresh clothing, which, in turn, absorbs the impurities thrown off by the skin. Moreover, clean, boiled clothes never carry disease germs.

In discussing any subject, we must first learn of the materials to be handled. With the knowledge of these, intelligent work and satisfactory results are sure to follow. In our special subject, HOME LAUNDERING, the information side will be discussed under the several heads: *Purifiers, Soil, Fabrics, and Laundry Aids.*

Sun, air, and water—Nature's purifiers—stand first and are indispensable. The sun's rays have wonderful properties, direct and indirect, in the form of heat. Nothing can compare with them. Many forms of minute plant life, moulds, and certain bacteria, will not grow in the sunshine; and sun and air, together with moisture, break up harmful

compounds, rendering them harmless. Moist heat at boiling temperature or higher kills all life if kept at that temperature long enough. The lower the form of life, the longer will it withstand heat. So, in order that clothes may be sterile, that is, free from life, they must be boiled at least ten minutes, and preferably twenty. Dry heat kept at a higher temperature for a longer time acts in the same way, but if not controlled, it may injure the fabric. Ironing applies heat for so short a time that it cannot be depended on to purify clothes.

Air, being one-fifth oxygen, aids in the breaking up of harmful compounds and, when in motion, scatters dirt.

Water is our chief dirt carrier. When in motion, water holds in suspension particles of dirt, which float away. Much of the soil of clothes may be dissolved in water, or, by the aid of soap, an emulsion is formed and the dirt is carried off.

Primitive methods of washing depended almost entirely upon flowing water to cleanse clothes, and washing in streams is still the method of cleansing used among people of simple habits to-day, a flat stone, upon which to rub or pound the clothes, being the only aid, unless soap is used.

More depends upon the kind of water we have for laundry work than upon anything else. Soft water is best, but it may absorb many things in its journey from the clouds. After air and roofs are washed, rain water may be stored for use, but if we get water from a stream or lake, it may bring with it particles of plants or soil. These may be strained out, or the water may be allowed to settle, the clear water being then carefully poured off. Water which has soaked into the ground and appeared again in stream,

lake, spring, or well, may have absorbed some mineral matter that may make it undesirable for laundry purposes.

The most common mineral found in water is lime, which makes water hard. Temporary hardness of water is most common. It is due to a soluble lime compound which will combine with soap to form a greasy scum. To overcome this difficulty water should be boiled. In case the hardness is not removable by boiling it is called permanently hard water. To overcome this add lime water or weak carbonated alkali before boiling. In softening water with an alkali, only as much as is necessary to do the work is desirable. More acts upon clothing and hands, weakening fabric and skin. The larger the amount and the greater the strength of the alkali, the worse the effect.

The *alkalies* commonly known and used in the household are:

AMMONIA, a gas dissolved in water, and mild in its action if diluted; it readily evaporates if heated. It is comparatively expensive.

BORAX, a powder, mild and expensive.

SAL SODA, OR CARBONATED ALKALI, a crystal or powder, stronger and cheaper than borax.

POTASH, OR LYE, a liquid or solid, strong but little used in modern times. It is derived from wood ashes by a process of leeching; is used in making "soft soap."

CAUSTIC POTASH AND CAUSTIC SODA are very strong and not expensive, but are rarely known in the household. One or the other is almost invariably used in the manufacture of laundry soaps.

SOAP, a very essential purifier, is discussed in a separate chapter.

RUBBING, POUNDING AND RINSING are valuable mechanical aids in purifying clothes.

SOIL

THE soil in clothing may be of two kinds. If it is the product of life—organic—it may be perspiration, oily secretions or dead skin, food material or stains, and usually bacteria of some kind. The disease bacteria are few in number; the harmless, helpful kinds are many. When organic material of any kind begins to give off an odor, we know that bacteria are at work. This is especially true of clothes that have been next to the body. All bacteria can be killed by boiling.

Of inorganic soil we have dust, ground up rock, which is usually mixed with organic material, and stains.

Stains must have special consideration. They will often come out with cold water alone, and this should first be tried. Stains must be removed before the garment is washed. They come out most easily when fresh and moist. Stains will usually be set, that is, partake of the nature of dyes, when acted upon by soap and heat. To remove stains after they have been washed, without doing serious injury to the fabric, is almost impossible.

We discussed alkalies in their relation to hard water. Now we want to consider *acids*—known to us ordinarily as sour-tasting materials, for example, vinegar and lemon juice. In removing stains they are often used. Acids and alkalies act quite differently—they neutralize each other, that is, one destroys the characteristic properties of the other when they are brought together in the right proportions. Acids are of many kinds and varying strengths, and should be carefully used.

STAINS.

WE will consider stains individually, but first let us take up the methods of removing them, whether we use boiling water, an acid, an alkali, a bleaching agent, or a volatile liquid.

If *boiling water* is to be used, stretch the stained part over a large bowl or saucepan, have a teakettle full of absolutely boiling water and pour water through the stain until it disappears. Hold the kettle high so that the water may fall with force upon the stain.

If an *acid* is necessary, stretch the stained part over a bowl of boiling water and with a medicine dropper or an old tooth-brush apply very dilute muriatic acid (1%) to the wet stain; occasionally dip the stain into the water and use acid again. When the stain disappears, rinse well in clear water and then in tepid or cold water in which a little ammonia has been poured—just enough to give a slight odor. Ammonia will overcome any bad effect the acid might have upon the cloth and will itself evaporate. Oxalic acid may be used in the same way if the stain will not yield readily. Oxalic acid comes in crystals and muriatic acid in liquid form. Both can be purchased at the drug store and are violent poisons, but in the 1% strength mentioned muriatic acid is harmless. Strong muriatic acid should be kept in a glass-stoppered bottle.

If an *alkali* is required, dilute ammonia is to be preferred, the method of procedure being the same as in the case of an acid.

If a *bleach* is desired, one of several methods may be used.

The sun bleaches by oxidation in presence of moisture; the efficiency is increased by green vegetable coloring matter. All colors are affected. Wet cloth or stain and lay it upon the grass in strong sunshine. Keep it moist. The process is a slow one but it does not injure the fabric.

Sulphur fumes bleach by deoxidation and are applicable to few kinds of stains, but most fruit stains will yield to them. Results are not permanent. Place a lump of sulphur on an old dish, have a funnel ready to confine the fumes; put a live coal or a match on the sulphur, invert the funnel over it, and hold the moist stain in the fumes. Sometimes a sulphur match will furnish gas enough. Do not get the burning sulphur on the skin nor breathe the fumes. The presence of moisture is absolutely necessary.

Peroxide of hydrogen and dilute ammonia will bleach by oxidation. The results are permanent, and particularly applicable to woolen fabrics. The ammonia must be diluted in the proportions of one teaspoonful of household ammonia to one pint of water. Use equal parts of fresh peroxide of hydrogen and dilute ammonia. Moisten the stain in this liquid until it disappears.

Chloride of lime bleaches by oxidation; the results are permanent, but unless the bleach is thoroughly washed out the fabric will be injured. A more desirable form of this bleach is as follows :

JAVELLE WATER.

1 lb. sal soda, or preferably pearl ash,
¼ lb. chloride of lime,
2 qts. cold water.

Mix thoroughly, let it stand several hours. Pour off clear liquid and bottle for use. Keep in a dark, cool place.

To use Javelle water, stretch the stained article and rub the liquid into it, rinse quickly in clear water, and brush again if necessary. Always rinse in ammonia water at last.

Ether, gasoline, benzine, alcohol, and chloroform, or in fact any liquid material that vaporizes easily, must always be used in daylight, and preferably in the open air. If in the house, no lamp or fire of any kind can be in the room, and the windows or doors must be open to carry off the vapors. Never put one of these materials on a wet cloth. The fumes are very inflammable, and serious damages would be done were these precautions not borne in mind.

SPECIAL INSTRUCTIONS FOR TAKING OUT STAINS

BLOOD—If fresh or recently dried, soak in cold or tepid water, rub out; when stain is brown and nearly gone, use soap and warm water. If very dry, soak and wash out; use Javelle water or peroxide of hydrogen.

BRASS—Rub with rancid lard or butter before washing. Warm white wine vinegar is a solvent for brass or copper, but must not be used on colored goods.

COCOA—Wash in cold water first, then rinse and pour boiling water through it. If resistant, try a bleaching agent.

COFFEE—Pour boiling water through it from a height. If resistant, try a bleaching agent.

FRUIT—Alcohol softens and dissolves many fruit stains. If the alcohol is warmed over hot water it will be more efficient; later, use boiling water poured from a height. If resistant, try sulphur fumes, dilute muriatic acid, or a bleaching agent.

GRASS—Alcohol will dissolve the green coloring matter of plants and is recommended when the material cannot be washed.

GREASE or OIL—Wash with cold water and soap first, and use solvents after drying, if necessary. Axle grease, rub with lard and let it stand to soften, then wash out. For fabrics that cannot be washed, the material may be treated with gasoline. Rub always toward the centre of the stain, and have several folds of clean cloth under the spot. Use always by daylight and in a draft. Ether is better than gasoline and is used in the same way. Powdered chalk or blotting paper may be used to absorb the oil. Kerosene will evaporate. Vaseline stains should be soaked in kerosene before washing. Chloroform, or preferably carbena, is a better solvent than gasoline, and with either there is no danger of flame or explosion.

INK—Place stained portion in sweet or sour milk and allow it to stand several days. Change milk, wash out in clear water, and try, again, if necessary. Unless you know the character of the ink, it is hard to know what to recommend. Try peroxide of hydrogen and dilute ammonia if the stain is fresh, lemon and salt, acid oxalate of potash, known as salts of lemon, or oxalic acid, and lastly Javelle water.

Red Ink—Wash with cold water or water and ammonia. If it does not come out, use Javelle water.

IRON RUST—Lemon juice, salt, and hot sunshine may dissolve the stain, but more often muriatic acid is necessary. Oxalic acid may be tried, acid oxalate of potash, known as salts of lemon, or oxalic acid and dilute muriatic acid. If available, ox-gall will remove iron stain.

MEDICINE—Alcohol usually dissolves medicines. For iodine, use hyposulphite of soda or chloroform.

MILDEW—Is really a plant, a mould growing on the fibre. It shows itself in warm weather when clothes are kept damp for a day or two. If fresh it may be removed, but if old it will not come out.

Wet in strong soap suds, cover with a paste of soap and powdered chalk, or chalk and salt, and put in the strong sunlight for hours. If it does not yield to these, Javelle water or bleaching agents may be used, but the fibre is liable to suffer.

MILK OR CREAM—Wash out with cold water, and later use soap and cold water.

MUCUS, as in handkerchiefs, should be washed in ammonia and water before using soap. In case of a heavy cold it is best to soak all handkerchiefs in a strong solution of boracic acid for several hours.

PAINT OR TAR—If fresh and washable, use soap and water; if not washable, use gasoline. If dry and washable, soften with lard or oil and then use soap and water; if not washable, soften and wash in gasoline. If color is delicate, soften with oil and rub out with ether or chloroform. The most effectual remedy for dry paint or varnish is amyl acetate or resin spirits; soften stain with one of them and wash out with gasoline.

PERSPIRATION—Use strong soap solution and let the garment lie in the sunshine. The perspiration under the arms is different from that of the rest of the body and requires an acid to neutralize it. Use dilute muriatic acid.

SUGAR OR GUM—Dissolve with warm water if washable; with dilute alcohol if not washable.

TEA—Rub out in cold water first, then pour boiling water through it. Glycerine may be used to soak the stain.

WAX—Cover the spot, both sides, with brown or blotting paper and apply a warm (not hot) iron. It may be dissolved by hot alcohol.

WINE—If a red wine, cover with a layer of salt while fresh, then use boiling water. Moist salt and sunshine may be used if it does not come out easily. If a yellow wine, wash first with cold water, then with soap and water.

FABRICS

THE fabrics that we deal with ordinarily are of both vegetable and animal origin.

The *vegetable fibres*, cotton and linen, are of a cellulose, woody nature, and do not readily combine with other materials. Their resistance makes them tough, strong, and not as easily dyed as animal fibres.

Under the microscope the cotton fibre is ribbon-like, somewhat thickened at the edges, tapering toward the end, and slightly twisted. The fibres come from the fruit pod of the plant, are from one to two and a third inches long, and seem like a flattened tube, probably a plant cell.

Linen comes from the stem of the flax plant. The fibres are from ten to twelve inches long and under the microscope are apparently straight, transparent tubes.

Cold dilute acids, or alkalies, will gradually weaken both cotton and linen fibres. Concentrated acids and alkalies act upon both according to concentration and time allowed. Linen is more strongly affected by alkalies than cotton. With concentrated acids cotton is converted into parchment-like material first, then gradually falls to pieces. With concentrated alkalies cotton becomes thicker, transparent, lustrous, is in fact mercerized, then decomposes. Sal soda (Sodium carbonate) acts but mildly on either cotton or linen. Moist chloride of lime and sunlight weaken both fibres, and if boiled with a weak solution of chloride of lime, the fibres grow weaker the longer the contact. This material is used in bleaching both fibres, and the fact that unbleached materials are stronger than bleached is thus accounted for.

The *animal fibres* ordinarily used are wool and silk. Both

are nitrogenous in character, one—wool—being hair-like, the other—silk—being gum-like. Both are more easily injured than vegetable fibres, silk being more delicate than wool.

Wool is composed of numberless sections or sheaths, one growing out of the next, and each sheath with more or less jagged edges. They form a tube with from one thousand to three thousand sections to the inch. These ragged-edged sheaths explain what is known as shrinking. When we think how closely the fibres lie in cloth, we can understand how the jagged edges may interlock with rubbing or with the expansion and contraction of heat and cold in the water with which we wash flannels. The wool fibres are from one to eleven inches long.

All alkalies act on wool. The effect depending upon the kind, concentration, temperature of solution, and duration of contact. Cold dilute caustic alkalies are destructive, but if hot they will dissolve the wool fibre. Sal soda makes the color yellow, the fibre harsh and less elastic. Ammonia has the least action. Dilute acids roughen the fibre but concentrated acids disintegrate it. Chloride of lime injures the fibre and, if hot, destroys it.

Silk, the product of the silk-worm just as it enters the chrysalis state, is a lustrous, strong, elastic fibre. The fibre is double, coming from two glands in the head through one opening, and is from $11\frac{1}{2}$ to $41\frac{1}{2}$ feet long.

All alkalies act upon silk according to kind, concentration, temperature of solution, and duration of contact. The lustre is first impaired and then the fibre is finally dissolved. Dilute acids roughen the fibre but concentrated acids disintegrate it. Both silk and wool are readily affected by dry heat; silk first stiffens, then breaks.

SOAP

IN very early times soap was unknown. Clothes were rubbed and beaten in running water to loosen the dirt. The oily dirt in the clothes is insoluble, that is, it is not removable by water. As a consequence the labor of removing it is so great that the fabric is liable to be injured. Later it was discovered that wood ashes would lighten the labor of washing, but if they were used too freely not only the dirt but the hands and the fabric itself were injured.

Soap is a combination of a caustic alkali with a fat or, more properly speaking, with a fatty acid. The fat is broken up into two parts—fatty acid and glycerine—by means of alkali and heat. The fatty acid combines with alkali and the glycerine is left free; glycerine is a by-product of every soap factory. Potash, soda ash, and caustic soda are the alkalies most frequently used in soap making. Potash produces a soft soap, while the soda, which is used exclusively in the soap factories in the United States, produces a good, hard soap. Among other materials used in soap are tallow, grease, cottonseed oil, cocoanut oil, cottonseed foots, corn oil, olive oil, olive oil foots, palm oil, castor oil, and resin. One or more of these products are used at will. A fixed amount of alkali is required to saponify a definite quantity of fat or oil; when the proper proportions are adhered to the result is a "neutral" soap. A neutral soap is one in which there is no "free" (uncombined) alkali or fat.

Resin is used in yellow laundry soaps. A small percentage of high-grade resin does not injure the quality of the soap.

In fact, it aids in forming suds, which carries off the dirt; but resin in excess or of a low grade makes undesirable soap.

Soap owes its cleansing power to its solubility and its attraction for "dirt." In hot water soap dissolves perfectly, but as the water cools it seems to separate, especially if there is much water present. Hot soap solution does the best work. The most plausible explanation of the detergent value of soap is that it is an excellent emulsifying agent: the dirt in clothes is largely of an oily nature, and oil is easily emulsified.

In choosing soap, the use to which it is to be put must be considered. A white, neutral, floating soap, like Ivory, can be used for all toilet purposes, and is also the best soap for silks, woolens, laces, and fine muslins. It will affect the fabric less than any other kind and, being white, leaves no color to be rinsed out or removed later. The light brown soap, like Lenox, is the universal laundry soap. The small amount of resin in it gives the color (as well perhaps as the darker fats used). The resin helps to form the suds, which acts as a dirt carrier.

As a rule, naphtha soaps are lighter in color than ordinary laundry soaps and contain no resin. Naphtha or a petroleum product akin to naphtha but less volatile is incorporated in the soap. The petroleum oil is a valuable solvent and adds to the effectiveness of the soap. The Procter & Gamble (P. & G.) Naphtha Soap is white; showing the high grade of materials that are used to form the neutral soap which is its foundation. A good naphtha soap lessens the work of rubbing and for that reason is popular with housewives who do their own washing. It also does away with boiling if plenty of water, sunshine and fresh air are used but an

occasional boiling is even then necessary to make clothes pure and sweet smelling.

To use Naphtha soap, shave it into warm (not hot) water and soak the clothes in it for one hour, or better still, over night. Very dirty clothes should have soap rubbed into them before soaking. Rinse clothes out of water in which they have been soaked, look them over for soiled spots which may need rubbing, rinse, blue, and hang out.

Soap powders are powdered soap, to which has been added more or less washing soda and, sometimes, a scourer.

Home-made soap is unsatisfactory. Even with the greatest of care in making, soap made by what is known as the cold process is not perfectly combined, and it contains all the impurities in the original fat. It would be far better for housekeepers to sell the fats and get a good soap for use.

Soap Solution.—For laundry purposes one bar of ordinary laundry soap may be cut up and dissolved in three or four quarts of hot water; this can be used at once while hot, or kept in a glass or china jar until needed.

Ivory soap solution, if sufficiently concentrated, will form a jelly on cooling; it is valuable in cleaning material for which you would not use soap and water—gloves, leather, and things of a similar nature. The proportions are one small cake of Ivory soap to two quarts of water. Shave the soap into the water and cook about ten minutes, or until perfectly dissolved. Use hot for any purpose, but only when cold and with a dry cloth for cleaning gloves, etc. The best results are obtained if the glove is kept on the hand during the process of cleaning.

LAUNDRY AIDS

MOST important of the little extras in a laundry is *starch*. It is of vegetable origin, and found in many parts of the plant, but principally in the seed, root, or tuber, where it is stored as food for the germ when it begins to sprout. The tiny starch granules, known to us as a tasteless, odorless, white powder, cannot be distinguished one from the other except by the microscope, when their shape, size, and markings are recognized. When subjected to heat and moisture these granules absorb moisture, burst their envelopes and combine with the water to form a gelatinous mass, more or less thick, according to the amount of water used. It is this peculiarity of starch which makes it valuable in the laundry. The threads of the cloth are coated with starch, and the spaces between the threads are filled. This gives stiffness to the material when dry, and prevents its mussing, soiling, or staining easily. The usual sources of starch are corn, wheat, rice, and potato. Sago and tapioca both furnish excellent starch, similar in its qualities to rice starch.

Rice starch is capable of great dilution, the granule being one of the smallest; it is used for fine muslins. It is manufactured and used very largely in Europe, and is little known here.

Corn starch is cheap and in general use; its stiffening quality is high.

Wheat starch is used in public laundries because its results

are satisfactory, the material being not only stiff but more flexible than when corn starch is used.

Potato starch is little used except for the filling of cloth in factories.

GENERAL DIRECTIONS FOR MAKING STARCH

Mix starch with a small quantity of cold water to a creamy consistency, add a little more cold water, and then the desired amount of absolutely boiling water, stirring constantly. Put the starch over the fire and boil it for several minutes, to insure complete cooking, and stir it all the time it is cooking. Cool or dilute for use. If oil, borax, or wax are used, they should be cooked with the starch, but bluing is added later.

The proportions for cooked starch are one measurement of starch to eight of boiling water, for thick starch; and one measurement of starch to sixteen of boiling water, for thin starch.

Uncooked or partly cooked starch will stick and make trouble for the ironer. (Irons must always be hot for starched clothes.) The amount of starch needed is regulated by the number of clothes to be starched. Starch can be made thinner by adding water, and it always grows thinner with use. Starched clothes must never be stiff enough to rattle.

THICK STARCH

Mix $\frac{1}{2}$ cup starch and
 $\frac{1}{4}$ cup cold water, add
 $\frac{1}{4}$ level teaspoonful shaven white wax or lard and
4 cups (1 qt.) boiling water.

Let it boil up several times, to be sure that wax is melted and mixed and starch cooked. Add a little bluing and

set dish in a pan of cold water until it is cool enough to handle.

THIN STARCH

In a clean granite kettle put

$\frac{1}{2}$ cup starch,

$\frac{1}{4}$ level teaspoonful lard or twice as much borax, stir smooth with

$\frac{1}{2}$ cup of cold water, then, stirring rapidly, add

3 pints of boiling water and continue stirring until it boils thoroughly. Have holder ready to lift it from the fire, or it will boil over. Add

1 pint of cold water to thin it and reduce the heat, and enough bluing to counteract the yellow color of the starch. Turn starch into a large dish. If carefully made, it need not be strained.

RICE STARCH

Wash $\frac{1}{4}$ cup rice, put into

1 quart water, boil it slowly, stir often at first, keep up the quantity of water, and cook until the rice is a pulp. Add 1 quart boiling water, and strain through a flannel bag (without pressing). If too thick, dilute it with cold water, and use while hot.

RAW STARCH

To 3 tablespoonsful of the plain starch, add

1 teaspoonful borax and

1 pint of tepid water. Stir well and use at once.

If prepared starch is used, make in the same way, but do not add borax.

After using, allow the starch, if clean, to stand and settle, pour the water off, and dry the starch. It may be used again as raw starch, or, better, may be made into cooked starch.

BLUING

Sunshine, moisture, and fresh air are the greatest bleachers. Could we command a clean grass plot, pure air, and

sunshine, there would be no need of bluing. Clothes become yellow from careless washing, dark colored soaps, stains, or impure water. To cover up this telltale color, we use bluing. Bluing is sold in solid or liquid form. The solid is usually insoluble, and is much used. It never dissolves, but the fine particles of blue are all through the water while it is in motion, and will settle when the water is undisturbed. These particles lodge in the cloth and give it a bluish-white color.

Indigo, a solid blue, was originally a vegetable product, but is now manufactured chemically. It was the first bluing known. It varies greatly in quality, and is little used at present.

Ultramarine blue was originally the stone *lapis lazuli*, ground fine, but is now manufactured chemically and sold in little blue balls.

Aniline blue, either solid or liquid, is a product of coal tar, and is a strong dye. This blue is used almost exclusively by the public laundries. It will not set in an alkaline medium, therefore the clothes must be rinsed free from soap before using it. To make sure of the color, a little acid is added to the water before the clothes are put in. Being a dye, it is not easy to wash out if too much is used.

Prussian blue is usually sold in liquid form. It was first manufactured at Berlin, hence its name. Being soluble, it is easy to use, and gives a bright blue to the clothes. Prussian blue is a salt of iron, and, with an alkali, changes to iron rust. If the clothes are rinsed free of soap, it may be used with good results. If careless work is done, you may find the clothes yellow or rusted in fine spots, and be unable to account for it. You can assure yourself that the liquid

is Prussian blue by heating a little of it with a strong solution of sal soda. The mixture will turn yellowish red and precipitate what is known as iron rust.

Every laundry cupboard would be more complete if supplied with the following materials:

BEESWAX or PARAFFINE, used to fill up and make smooth sad irons. It should be tied in a cloth for easier handling.

COMMON SALT, a neutral compound, used as a scourer for soiled irons, or to set colors.

AMMONIA, in liquid form (household ammonia), and

BORAX, a white powder. Both being mild alkalies, they are used where soaking rather than rubbing is desirable to loosen the dirt, and the color is not to be considered.

SAL SODA, or washing soda, is used for testing, and to "break" hard water.

JAVELLE WATER is used to take out stains, and to bleach.

MURIATIC ACID, dilute, a liquid, and

OXALIC ACID, in crystal form, are used to take out stains. A medicine dropper is desirable to use with these, as the skin is easily roughened by them.

VINEGAR, used to set colors. It should be colorless.

GRAIN ALCOHOL, used to dissolve sugar, some medicine, and grass stains.

ETHER will dissolve fat or oil from the more delicate fabrics.

KEROSENE is a solvent, used in washing and cleaning rubber.

GASOLINE is used to take out stains and clean gloves and ribbons.

Being very inflammable, it must be used with great care and where there is no flame.

SULPHUR is used as a bleacher. When burned, the fumes must be brought in contact with a moist stain.

POWDERED CHALK or FULLER'S EARTH is used to absorb stains.

SOAP should be bought in quantity and kept in a clean, dry place. If allowed to harden, there is less waste in using.

EQUIPMENT FOR HOME LAUNDRY

THE ROOM, used for laundry work, should be light and airy.

The STOVE, if for laundry work exclusively, should be one made for the purpose. It need never be blacked.

Cost, \$6.50.

TUBS, if stationary, should be porcelain lined. Slate is next best, but has seams, which are undesirable. Tubs are also made of cement. Wood is too absorptive to be clean. The height of stationary tubs from the floor is rarely right for the average woman. This should be considered when they are set. Portable tubs are made of fibre, galvanized iron, enamel, or wood. The wooden ones are best if made of cedar and brass-bound, but all wooden tubs are heavy, and will warp and leak if not kept in a damp place or with water in them. Tubs of all kinds must be kept clean, but Sapolio must not be used. A scourer of any kind roughens the surface and makes it easier for the dirt to lodge. A strong soap or sal soda will keep the galvanized tub bright, but at the expense of the plate. When that is off, the sheet iron foundation will rust.

Cost. No estimate can be given for stationary tubs. They are usually put in when the house is built, and the local plumber can be consulted. *Fibre Tub, \$1.35; Galvanized Iron Tub, 85c.; Wooden Tub, \$1.25.*

Three tubs are necessary for good work.

A WASH BENCH should be of the right height for the



LAUNDRY STOVE

user. Thirty-six inches or less from top of tub to floor is considered right. The bench may have pegs to hold the tubs in place, and often has a support for the wringer set between the tubs.

Cost, \$1.05 to \$1.25.

A RUBBING BOARD is often moulded into the stationary tub, but this is rarely used, probably because it is not of the right height or slant. Portable boards are made of brass, zinc, or glass, and as long as they are not broken or ragged, there seems to be little choice in them, except that the rougher ones are better for dirty clothes.

Cost, 35c. to 75c.

WASHING MACHINES are very helpful for heavy clothes and where large washings are the rule. Many washing machines are wood-lined, have a kneading motion, and are worked by a lever or crank. Others have an inverted cone, worked by a lever, which presses down into the wet clothes and sucks the dirt up. The clothes may have to be looked over for soiled spots, which must be rubbed. The machine must be kept clean, free from dust and rust, and out of the weather.

Cost, \$3.95 up.

A WRINGER saves not only time and strength but the clothes as well. A good one will last for years if well cared for. Always clean and dry it after using. A little kerosene will brighten the rubber when it becomes dull or stained, but remember that kerosene cleans by eating off a thin layer of rubber every time it is used. Oil the wringer occasionally and, when not in use, leave the screws loose,

that the rolls may not become flat. Cover the wringer with a cloth to keep it clean.

Cost, \$2.50 to \$6.00.

The BOILER may be round or oblong, stationary or portable, but should be very largely of copper, not only for the sake of greater durability but also because copper transmits heat more readily than almost any other metal.

Cost, \$2.00 to \$7.00.

A CLOTHES STICK may be made of an old broomstick, or can be bought with a metal-pronged end.

Cost, 5 to 15c.

A PAIL, of enameled ware, galvanized iron, tin, fibre, or wood is necessary for changing waters.

Cost, Fibre, 98c.; Enamel, \$1.05; Wood, 30c. to 50c.; Galvanized Iron, 15c. to 23c.; Tin, 55c.

A DIPPER, of enameled ware or tin, is also necessary. Tin is so thinly coated on the iron that it soon wears off and rust appears.

Cost, Enamel, 38c.; Tin, 23c.

A DISH PAN, of enameled ware, is desirable to hold clothes when being carried to and from the boiler.

Cost, \$1.00. to \$1.25.

A SAUCE PAN, of 5 or 6-qt. capacity, is necessary for making starch, and this should be of enameled ware, made with a bail.

Cost, 35c. up.

A SAUCE PAN or PAIL is needed in which to make soap solution.

Cost, 25c. up.

A TEAKETTLE, of enameled ware or tin, for heating starch water.

Cost, 85c. up.

1 CASE KNIFE, for shaving soap, wax, etc., and for cleaning irons.

Cost, 12c.

1 LARGE WOODEN SPOON, for starch making.

Cost, 5c.

For measuring or stirring.

1 TABLESPOON.

Cost, 15c.

1 TEASPOON.

Cost, 10c.

1 TIN CUP ($\frac{1}{2}$ pint, divided into fourths).

Cost, 15c.

1 QUART CUP.

Cost, 18c.

A MANGLE or IRONING MACHINE is desirable if there is much flat work—bed and table linen and towels—to be ironed. They are little used outside of a public laundry, but deserve to be better known. They save much time and labor, and, if the rolls are heated, do excellent work with careful handling.

Cost \$20.00 to \$30.00.

The TABLE for sprinkling and ironing should be strong and firm, and not more than 32 inches high. For thick starch work, the weight of the ironer is often laid upon the iron, and her table must be adjusted to her work. For ironing, the table should be covered with two thicknesses of a wool or cotton blanket, or one of felt, made for the purpose, and over that a sheet made of firm, smooth cotton, preferably half bleached, because it wears longer. Never furnish old, half-worn cotton for an ironing sheet. With care and an occasional washing, the new cotton will last for



MANGLE

months. The sheet should be hemmed and have tapes attached to it, which are tied under the table and hold it in place.

Cost. Table, \$2.00 up; laundry settee, 36 in. long, \$4.25; blanket, cotton padding 68 in. wide, \$1.10; cotton, unbleached, 36 in. wide, 10c.

A SKIRT BOARD is used for many things besides skirts. It sometimes has a standard attached. If this makes a firm board, it is very desirable and can be used for a large part of the ironing. The blanket should be tacked on, and the cotton sheet tied or pinned.

Cost, 65c.; (five feet long) stand (Udell) 98c.; with rack underneath, \$1.25.

A BOSOM BOARD is needed for shirt ironing, unless the end of the skirt board can be used for that purpose.

Cost, 18c.

A SLEEVE BOARD is a great help for infants' clothes as well as sleeves.

Cost, 35c. to \$1.10.

An IRONING STAND may be free from or attached to the table or board, but it is necessary to protect board and cloth.

Cost, 5c.

An IRONING HOLDER of asbestos, may be made or bought.

Cost, 5c.

BEEWAX or PARAFFINE, wrapped in cloth, the ends of which are covered with a handle, can be bought to keep irons smooth.

Cost, 5c. each.

A CLOTHES HORSE, which can be folded up when not in use, is necessary. It should be light, strong, and made with no iron anywhere.

Cost, 75c.



BRUSH FOR SPRINKLING CLOTHES



SLEEVE BOARD

SAD IRONS must have a smooth surface. Nickel-plated irons will not rust. Steel-faced irons will keep smooth with care. The irons with detachable handle are desirable, but the old-fashioned ones will do quite as good work. A gas iron has a tube connecting it with the gas pipe, and the gas burns inside the iron. An electric iron has wire connections with an electric plant. The heat does not vary in this iron, so it can be used continually.

New irons must be heated thoroughly and rubbed with grease or wax before using. Store irons in a warm, dry place. If they are to be packed away, rub them with vaseline or clean grease and wrap in paper. Irons must be kept clean to do good work. Never put a soiled iron back onto the stove. Use a dull case knife or piece of steel to get the starch off. Sometimes it will be necessary to rub them on fine salt sprinkled on paper, or even to wash them in soap and water and dry them. Wax rubbed over the warm surface and then rubbed off on a cloth or paper will keep them smooth.

Cost, 2 sad irons, 8 lbs., 40c. each; 2 sad irons, 6 lbs., 30c. each; 1 sad iron, 4 lbs., 20c. each; 1 flounce iron, narrow and long, 25c; 1 or 2 polishers, 45c. each; set of 3 irons, with detachable handle, 98c.; gas or alcohol iron, 95c.; electric iron, \$4.50 to \$6.00.

CLOTHES BASKET. It should be light and easily handled.

Cost, Wicker, 75c.

A CLOTHES LINE, if of rope, must be kept clean by occasionally washing it. If stationary, it must be wiped with a damp cloth before using, whether rope or wire. Rope line, if brought into the house after use, must be kept in a clean place, free from dust.

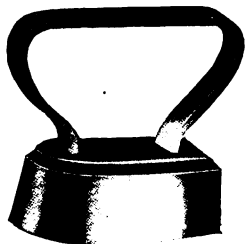
Cost, Rope, 65c. (100 ft.)



MRS. POTTS IRON



COMMON IRON



POLISHER



FLOUNCE IRON



GAS IRON



ELECTRIC IRON

CLOTHES PINS, the ordinary wooden ones, must be washed occasionally to keep them clean, and must always be stored in a clean, dry place. If in a clothes-pin apron, fold the top over the pocket and put on a shelf.

Cost, 100 for 10c.

A CLOTHES-PIN APRON will form a bag for storing the clothes pins, as well as a convenient pocket for them when needed. To make apron, take a piece of bed ticking or something equally strong, have material half a yard wide and three-quarters of a yard long. Turn up one-quarter of a yard on the outside for a pocket, bind the pocket and the sides of the apron with tape, tack the pocket in the middle, and put the apron on a belt.

Cost, 10c. to 20c.

A WHISK BROOM for sprinkling clothes, is desirable, and works best if the broom is on one side only of the handle.

Cost, 25c.

SCISSORS.

Cost, 25c. and upward.

A FRINGE BRUSH, to straighten fringe, is made with bristles on a slant.

Cost, 25c. to 80c.

A SOFT BRUSH for cleaning spots on flannel.

Cost, 25c.

An old TOOTH-BRUSH, for taking out stains.

A medicine dropper, for taking out stains.

Cost, 5c.

A FLANNEL BAG, for straining rice starch, is made of a light quality of flannel, usually with cotton warp. A piece about 15 inches square is folded from corner to corner, mak-

and makes the work of washing easier, but only white clothes can be soaked. It is not wise to soak all kinds of clothes together. If three tubs are available, use one for table linen, one for bed and body linen, and one for the soiled towels and cloths. These last should be soaked, even if the rest are not. The table linen will need soaking least of all. Wet the clothes, rub soap solution on the soiled parts, fold and roll each piece by itself, pack in a tub, cover with warm, soapy water, and let them stand overnight. By doing this, the dirt from soiled parts will not get into the clean parts.

TUESDAY.

1. Light fire and heat water.
2. Make soap solution.
3. Do washing. (Special order of washing will be discussed later.)
4. Sprinkle and roll clothes.

WEDNESDAY.

1. Iron and bake.
2. Do thick starching.

THURSDAY

Finish ironing.

FRIDAY.

Put house in order.

SATURDAY.

Bake and plan for Sunday.

ORDER OF DAY'S WORK OUTLINED

(Details are given on following pages)

TUESDAY.

1. Heat water.

2. Make soap solution.
3. Wash flannels or silk underwear. These require no boiling and only warm water, and, if rinsed and hung out at once, will be dry before the line is needed for other things.
4. Wash stockings.
5. Using warm, clean suds, wash cleanest things first:
Table linen,
Bed linen,
Towels,
Body linen,
Handkerchiefs,
Soaked clothes.
Make fresh suds whenever necessary. It is a mistake to think you can wash clothes clean in dirty water.
6. Boil. Put clothes into cold water with soap solution. Let them come slowly to the boiling point, then let them boil for ten minutes. The longer they are coming to the boil the better.
7. Rinse in two or three waters. The more waters, the whiter and cleaner the clothes.
8. Blue. Shake out each piece and put through the bluing water. Never allow clothes to stand in bluing water, or they will become streaked.
9. Starch whatever needs thin starch.
10. Hang out, putting pieces of a kind together, and have the threads of the cloth straight.
11. Wash colored clothes.
12. Take down, piece by piece. Never crush clothes into a basket.

13. Dampen and roll up.

WASHING OF LINEN AND COTTON

WHITE CLOTHES

Heat water in boiler.

Place tub on bench and rubbing board in place. Be sure that both are clean.

Pour warm water into tub.

Add soap solution and have some near by.

Take cleanest clothes first, soaked ones last.

Rubbing is necessary for soiled clothes. Bench and board should be of the right height, so that the arms, rather than the back, will do the work. Rub soap or soap solution on the articles, drop it to the foot of the board, hold the goods firmly with both hands, but in such a way that the cloth, not the hands, will get the benefit of the rubbing. While rubbing up and down the board gradually gather the cloth into the hands, then turn the article and rub the other side in the same way. Soiled parts may need extra soap and rubbing. Garments should be left wrong-side out, to protect the right side from dust, etc., while drying. Take fresh suds whenever water becomes dirty. Delicate fabrics should be rubbed between the hands, the fleshy parts of the thumb being employed instead of the board.

Put clothes through a carefully adjusted clean wringer. Wringing by hand is not only hard work, but it strains the cloth. When using the wringer, fasten it firmly in a convenient place, adjust the screws to bring the rolls close together, and fold the cloth so that it will be even in thickness when going through the machine. Be sure to fold all buttons and hooks inside the garment and turn the wringer

slowly. For blankets or heavy material the wringer must be loosely adjusted.

Second suds is usually necessary. Shake out clothes from wringer and drop into fresh, warm suds. When the tub is partly filled, look over clothes for spots that may need rubbing; then wring again into a clean basket or pail. The clothes are now ready for

Boiling. Clothes should be clean before they are boiled, but if any soiled or yellow parts have not yielded to rubbing, put soap on them before they go into the boiler. Half fill the boiler with cold soft water and enough soap solution to make a light lather. Shake out each piece and drop it into the water. All white clothes should be boiled, and the best results are obtained when there is a large quantity of water and the boiler is but half full of clothes. Results are decidedly best when the clothes take a long time to reach the boiling point and boil about ten minutes. A clean stick is necessary for handling the hot clothes. If the clothes grow yellow in boiling, it may be due to a poor quality of soap, water containing iron, or poor washing. The color given by dark resin soap may be taken out by kerosene. This should be used only occasionally and in the proportion of two tablespoonfuls to a boiler of clothes. Boiling should not be omitted or slighted. The germs that make bad-smelling clothes are easily killed by boiling. Disease germs may need longer boiling—an hour at least, or several boilings; but this is usually done under a doctor's directions.

After the white clothes have been boiled (and clean, cold water should be used for each new boilerful) the lamp cloths may go into the hot water without previous washing, kerosene being the agent that cleanses them. They must be well

rinsed to get rid of the kerosene smell, and for this purpose hot water is better than cold.

Rinsing is very important, for clothes must be free from soap before bluing; especially if you use the liquid blue. Lift the clothes slowly out of the boiler into a clean pail or dishpan, and drain them to get rid of the soapy water before dropping them into the rinsing water. Use soft water for the first rinsing, then hard water if color of rain water is not good. The first rinsing water should be warm, or the soapy curd will harden on the clothes, and it may be necessary to rub to get it off. A second, and even a third, rinsing water is desirable. It is careless rinsing that leaves clothes a bad color, and no amount of bluing will cover it up. Use the wringer for rinsing and bluing waters—in fact, whenever possible.

Bluing. We have grown to like clothes of a blue-white color. The more sunshine and fresh air, the less blue is needed. No rule or proportion can be given for bluing. The quantity to be used must be regulated by the color and the amount of clothes to be blued. Often more blue must be added, or a fresh water made. Tie the solid blue in a thick cloth, flannel preferred, wet it, and squeeze out. Make a strong solution of bluing in hot water, using a dipper or small pan to hold it in, and from this add what is needed to the tub of water. Take a little of the solution in the palm of the hand to test it. It should be of a pale blue color. Hard water may be used for bluing if color of soft is not good. When bluing water is right in color, stir it up and use at once. Remember that if it stands the solid blue will settle, and clothes that touch the bottom or sides of the tub will become streaked with blue. Shake out each article and

drop it into the bluing water; then very soon wring it out and drop it into a clean basket. Unstarched clothes are now ready for the line. Clothes requiring thick or raw starch should also go onto the line to get the sun and air.

Starching comes next for those clothes requiring thin starch: aprons, shirt-waists, the trimming of underwear, etc. Make the starch according to directions given on page 23. The amount of starch needed depends upon the number of garments to be starched. Those that should be stiffest must be starched first. Dry or thick materials take up more starch than wet or thin ones, and the starch may need to be thinned with water for some garments. When only part of a garment is to be starched, gather that part into the hand and dip it into the starch, rub it well, then squeeze out the extra starch. This must be done by hand, the rest of the garment being held out of the way. The starched pieces are hung out with the rest.

Drying. Sunshine and fresh air are so valuable in bleaching and purifying clothes that we cannot afford to dry clothes indoors if we can control a bit of outdoors. To aid in the bleaching, put clothes out without wringing, or let them lie on the grass and moisten them frequently.

The line must be wiped with a damp cloth, and the clothes-pin bag, which is also an apron, must be tied on. In cold weather the laundress should protect herself with a sweater or short jacket, a hood, and white mittens. Hang each piece so that the threads of the material are straight and the garment is as nearly as possible in the shape desired when ready to use again. This helps greatly to simplify the rest of the work, and, if ironing for every piece is impossible, you will have straight, sweet, sun-dried clothes to wear or use, with-

out any further work except folding. Many people prefer the odor of sun-dried clothes, and if the wind whips out the wrinkles, they are very acceptable. Ribbed underwear, stockings, towels, and often sheets and pillowcases, can be finished in this way when economy in laundry work must be practiced—but always the ribbed underwear. Hang pieces of a kind together and place hems well over the line before pinning. Hems rather than selvages should go over the line. Consider how things will dry quickly, and never let water run into gathers or pockets, or have puckers and corners to stretch out and straighten later. When clothes are dry, take them down carefully, shake them free from dust and possible insects, and fold them lightly (never crush them) into the basket.

Dampening or sprinkling is usually done the last thing at night. Cover the table with a clean cloth, fill a basin with warm water, and use a clean whisk broom for sprinkling. The whisk should be kept for this purpose only. A patent sprinkler may be used, or the hand, but the drops should always be small. Sprinkle each large piece, fold sides and ends into the middle, then roll lightly. Lay small pieces together before rolling. Linen should be very damp. Pack all the rolls into the basket and cover tightly. Sprinkle only what can be ironed the next day. If kept damp too long, in hot weather especially, the clothes may mildew.

Ironing is the finish of good laundry work and the test of the laundress. It is done to make clothes smooth, to make them feel better and stay clean longer. Have ready an ironing table or board, tightly covered with a blanket and a clean ironing sheet, an iron stand, and clean irons—and to keep the irons clean and the sheet unsoiled, have at hand

beeswax in a cloth, a piece of old cloth, and a piece of clean paper, folded three or four times, to try the irons on. To moisten the clothes if they become dry, there should be a bowl of clean water and a clean, soft cloth. A large piece of paper may be spread on the floor to protect any pieces that may hang to the floor. If the irons are heated by gas, they must be wiped off several times while heating, else the moisture that collects on the cold iron will form rust and soil the clothes. A laundress's test for a hot iron is to hold it near her cheek for a few seconds. If too hot for this, it is too hot to use. But it is better to try the iron on a piece of old cloth. Another test is to touch the bottom of the iron with a wet finger; if it hisses, it is hot—the shorter the hiss, the hotter the iron.

Shake or stretch the article to be ironed into shape and place on board, having threads of cloth straight. Iron with right hand from right to left, using the left hand to arrange the material, but occasionally iron with the left hand. As the material is ironed, bring it over the table or board toward you. First iron the part that will wrinkle least, leaving the plain, straight parts until the last. Ruffles and trimming should be ironed first. Lace must be stretched into shape before ironing and again afterward, to soften it. Best results are attained when the iron follows the long warp thread of the material. The cloth should be left dry, especially bands, hems, and seams, or they will wrinkle. Linen must be very wet, and must be ironed with a heavy iron until perfectly dry. This gives a smooth, glossy surface and firmness to the material. For heavy materials use heavy irons; for thin materials, lighter irons, and for gathers, a narrow, pointed iron. Iron quickly with an iron hot, yet not hot enough to

scorch. If the material becomes dry or soiled, dampen or rub it with a soft cloth.

Folding does not improve the appearance of articles, but it is necessary in order to store things and keep them from mussing. In general, all pieces should be folded several times lengthwise, then softly crosswise, until of convenient shape for handling. The trimming, if any, should show, and usually it governs the shape of the folded garment.

Airing is necessary to perfectly dry the clothes; the clothes should hang over night on the bars, and be sorted, mended, and put away the next day. Damp clothes are a menace to health. Clothes should be aired in clean, pure air, that they may smell sweet and be free from dust.

DIRECTIONS FOR SPECIAL ARTICLES

TABLE Cloths must be freed from stains before washing, and must be shaken and hung straight on the line, the selvage folded six inches over at least; the cloths may be doubled—there will be less chance for them to whip out at the corners. Fold several times when taking from the line and never crush into the basket. If the directions for hanging linen straight are followed there will be nothing further to do, but if the linen has dried crooked and is stiff, it must be straightened after it is dampened. For this, two people are needed, one at each end, to shake and stretch it into shape. Let each person gather the cloth into her hands just below the hem; hold the selvages tightly with the little fingers, the rest hold loosely; then, with both hands held high and close together, at a signal throw the hands quickly down and out. Repeat this several times if necessary, then fold selvages together, right side out. When ready to iron, lay hems on table with the rest of the cloth at the back of the table to keep it damp, iron one side the full length of cloth until only partly dry, then the other side until perfectly dry. A hot, heavy iron is necessary, and irons must be changed often. This method will give you a firm, glossy linen that will hold its shape and look well. If it is possible to store it with only one long fold, it will look better; if not, fold again and iron fold in. Never press crossfolds. Hang the cloth to dry, and fold it very lightly when ready to put

away. All folds may be put on the right side of the cloth in the following manner: After ironing both sides, open it and bring selvages together in the one middle fold on the wrong side, iron the new folds, and lay sides together to air and put away.

Very old or thin linen may need the least bit of starch in it. One cupful of thin starch to half a pail of bluing water will be enough. The linen will be a little firm and glossy, but it must not show that it has been starched.

Napkins also must be very damp, and must be ironed until dry. Stretch into shape, and place on board right side up and hem in front of you. Iron both sides, then lay hems together square and true and make two lengthwise folds, then two crosswise folds, and iron all folds in. The test of a well-ironed napkin is smooth, glossy linen and square, true corners, all even. Napkins may be ironed double, like a tablecloth. If the napkin is small, it may be folded into thirds like a fan, first one way, then the other. Embroidered napkins must be ironed on the wrong side, over several thicknesses of flannel, to bring out the design, then the rest of the napkin must be ironed dry and glossy. The embroidery must appear on the outside when folded. Fringe must be whipped and brushed straight, never starched.

Carving cloths, tray cloths, centre pieces and doilies should have hems and corners true. They are never folded, but should be loosely rolled if too large to lie flat in a drawer.

Towels, if of damask, are ironed on both sides, then folded twice lengthwise. If of coarser weave, iron one side, then iron the other side as you fold it. Bath towels should never be ironed.

Handkerchiefs are made very damp, ironed smooth and

straight with a hot iron, and folded as a napkin is folded. Embroidery should be ironed on the wrong side, appearing on the outside when handkerchief is folded.

Sheets and *Pillowcases* are sometimes made of linen but more often of cotton. If trimmed, they will require starching. The whole or the trimmed part of the pillowcase and one quarter of a yard from the edge of the wide-hem end of the sheet, may be dipped into thin starch. The starched parts must be thoroughly dampened and ironed smooth and dry with a hot iron. Turn the pillowcase when ready to iron it. See that the corners are pulled out and that the cloth is straight. Iron trimming, then one side of the pillowcase, and, as you fold it, iron the other side. All folds are lengthwise. Shake the sheet as you do the tablecloth. If unstarched, this may be done before dampening. Fold once lengthwise, right side out, then crosswise; bring the hems together and sprinkle them, leaving the rest of the sheet dry. Fold the dampened parts together and roll up. Use a heavy iron for sheets—one weighing eight or ten pounds is best. Iron the dampened parts separately and the dry parts together. Fold lengthwise and hang to air.

Nightgowns have only the trimming at neck and sleeves starched. Sprinkle the entire garment, and fold starched parts and hem inside before rolling. When ready to iron, turn garment on right side and iron trimming first. Then lay body lengthwise of board or table, iron front, then back—or put it on the board and iron a single thickness at a time. Fasten at throat, and fold the body to width of yoke, making a long, narrow strip, then fold crosswise to the depth of yoke. Let sleeve ends show at sides of yoke.

Drawers have only the trimming starched. Iron band or



1.



2.



3.



4.



5.

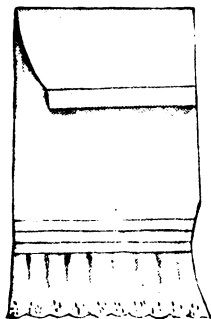
FOLDING OF NIGHT DRESSES



1.



2.



3.



4.

FOLDING OF DRAWERS



1.



2.



3



4.



5.

THE FOLDING OF CORSET COVERS



1.



2.



3.

FOLDING OF CHEMISES

yoke first, then trimming and then body of garment. Fold to show trimming only.

Corset Covers need thin starch all over. Dampen, fold right side in, and roll. Iron trimming first, straighten each section of garment and, if a fitted corset cover, lay seams on the edge of the board nearest you. Iron each section smooth, having threads of material straight. If this is carefully done, the garment will fit and look as well as when new. Fasten at throat, and fold to show trimming.

Petticoats need to be starched only at the bottom, but a little thin starch will make the top iron more easily. Gather the hem and trimming into the hands and put into the starch. Rub them a little, so that the starch may be evenly distributed, wring out well by hand (or the wringer may be used), shake, and hang straight to dry. Dampen well and, when ready to iron, turn onto the right side. Iron band or yoke first, then ruffles. Keep the damp part in a bunch, that it may not dry out. Put skirt onto board, hem to the right. Iron hem first, then between ruffles, and lastly the body of each section lying on the board. Thoroughly dry each part. Use a damp cloth freely for parts that are soiled or too dry to iron smooth. Take skirt from the board and hang to air. Fold by laying the middles of the back and front together, then fold each half back upon itself fan-like, making a long strip, which now fold loosely from band to trimming.

Shirts, Collars, and Cuffs require thick starch, special directions for the use of which will be found on page 22.

Shirt-waists, if colored, must be carefully washed according to directions given for "colored clothes." Dip the shirt-waist into thin starch; wring out, and hang waist to dry in

the shape in which it should be worn. If the material is heavy, no starch will be needed, except, possibly, for neckband, pleat, and cuffs. If the waist is thin or fancy, with soft cuffs, it will need no further starching. If neckband and cuffs are to be stiff, thick starch may be rubbed in when shirt collars and cuffs are starched; or raw starch may be made when ready to dampen waist, and the neckband, front pleat perhaps, and cuffs may be dipped into it, rubbed well and squeezed nearly dry. Sprinkle the rest of the waist, fold and roll. When embroidery or design of material is to be brought out, iron on wrong side. When plain, take polisher or ordinary iron of small size for the neck and cuffs. Best work can always be done with the part to be ironed straight and near to the front edge of the table, right under the ironer. Iron the neckband and cuffs first on the right side, then on the wrong, then again on the right side to dry and polish. Use the ordinary iron for the rest of the waist; fold the sleeve at seam and iron on top side nearly to fold. With hand inside sleeve, loosen the two sides, then iron lower side of sleeve. With hand inside again, change position of unironed part and smooth it with narrow iron, leaving no crease in sleeve. Place small iron inside sleeve at top, and smooth gathers. Do this also at cuffs if possible. If sleeve board is used, these directions are unnecessary. The fronts are usually ironed next and the back last. Stretch front pleat and tucks into shape, place pleat next you on the board, and iron until perfectly dry. Lastly, put iron upon seams and leave them perfectly dry. Smooth all creases and hang waist to air.

THICK STARCHING

The most approved way of stiffening shirt bosoms, collars, and cuffs, is by the use of thick, boiled starch. Raw starch carefully used will produce a similar result. Make thick starch as shown on page 22. For rubbing in starch, use a clean table or, better still, stretch over the table a heavy, damp cloth, and fasten it securely by pins or strings. On the table place the starch, a bowl of water, and a clean, soft cloth.

Dip *shirts* into water and wring as dry as possible. Have them still wrong side out, shake them straight, stretch the neckband or collar into shape, and lay it upon the table wrong side up. Rub starch into it with the hand, especially on seams and edges, until it feels full of starch. Put a little starch into the back of the yoke. Take a damp cloth and rub off lightly any extra starch. Stretch the bosom into shape and place it on the table wrong side up. The back of the shirt will lie beneath it. On the bosom lay the two cuffs or wristbands straight and wrong side up. Rub starch into the cuffs from the wrong side until it appears on the right side and the cuff feels full of starch. Rub off any extra starch with a damp cloth, and smooth out any wrinkles on the right side of the cuff. Rub starch into the bosom the same way, "clear it off," turn it onto the right side, and work out all wrinkles. Leave all parts as smooth and true as you wish them to be when ironed. Separate the back from the front, hang bosom toward the fire, have neckband in shape, tab turned up, and cuffs straight. Allowing parts to dry in shape makes the work of ironing comparatively easy. Treat separate collars and cuffs in the same way as the shirt and pin them onto a cloth, or string them together to dry.

Thick starch work is never dampened by sprinkling, but by contact with a wet cloth. It is better to dampen the clothes overnight, but four or five hours' pressure will answer. Dip the lower half of the shirt into water and wring it half dry, turn half of the wet part over the bosom and half over the back. Place the cuffs on the bosom, fold the sides toward the centre, and roll from the neck down, or, better still, place one shirt upon another, and over all a cloth, board and heavy weight.

To iron a shirt you need an ironing table, a bosom board, a knife to clean the irons, wax, a bowl of water, a clean cloth, and polishing, as well as ordinary flat-irons. Turn the shirt right side out, double the back in the middle and iron it quickly with a common iron. Iron the yoke. Straighten the cuffs, and with a polisher, iron first the wrong side slightly, then the right side until dry and polished. To polish successfully, great pressure must be used. The weight of the body is often brought down upon the iron. Iron the sleeve just above the cuff. Next, iron the neckband on the wrong side, and polish the inside of the yoke, because it shows when the shirt is folded. Dry and polish the right side of the band. If the collar is attached to the shirt, iron it first, but do not turn it over until you are ready to fold the shirt, then fold carefully with the hand, and press it with the iron in the middle of the back. Put shirt on bosom board. If the shirt is open in front, iron the upper side first; iron lightly, then dry and polish. Then iron the lower side of the bosom, then both together until perfectly dry. Be sure the sides are of equal length and the eyelet holes coincide. If the shirt is closed in front, iron the side near you first, then the pleat in the middle, raise the pleat with a



1.



2.



3.



4.



5.

FOLDING OF SHIRTS

dull knife. Lastly, iron the side from you, working toward the outside of the bosom. Always work lightly and slowly at first until the part begins to dry out, then with force and faster, to dry thoroughly and polish. After the bosom, iron the cloth next to it and the tab. Take the shirt from the bosom board, place it, front down, on the table, iron the back of the sleeves, turn the shirt, iron the front of the sleeves and the front of the garment. Fasten the neckband together, lay the shirt in shape, bosom up, and iron a fold in the yoke near the band. Turn the shirt over and fold sleeves onto the back. Next, fold body of garment onto the back, making a strip the width of the bosom. Fold this strip to size of bosom and hang the garment to air.

Collars and *Cuffs* are ironed with the polisher first lightly on the wrong side, then on the right side to dry and polish. Curl them when quite dry with a common iron, and turn the corners if desired. Before curling, warm the collar with the iron, place it rightside down, and hold iron in right hand on the end of collar toward you. Take that end in your left hand, have edge of iron close to it and, as the iron recedes, follow it closely with the left hand. Do this several times, and from both ends, until the collar assumes its proper shape. Practice and dexterity only will make an expert at this work. If "domestic finish" is desired for linen, the gloss can be taken off with a damp cloth. Wring the cloth as dry as possible and rub lightly, preferably when the linen is warm.

A damp cloth is necessary in thick starch to take out wrinkles or remove dirt. Wring the cloth very dry and work lightly with it—pat rather than rub. Always have clean irons. If the iron sticks, it may be dirty or too cool.

Never return an iron to the fire without being sure that it is clean.

CLEAR STARCHING

Thin Muslins, fine Handkerchiefs, and Infants' Caps and Dresses should be clear starched. A very thin starch is used which has a clear appearance, hence the name. This may be made from corn starch, in the proportion of one level tablespoonful of starch to one quart of water. Boil ten minutes. Rice starch is even better. Make according to directions given on page 23. It will probably be necessary to dip a bit of material into the starch and iron it to find out when the starch is right. The muslin should be as stiff as when new, never stiff enough to crack and rattle.

Use Ivory Soap for all fine work—and Ivory Soap solution is better still. If the material is soiled, soak it, then wash it very carefully, squeezing rather than rubbing. If it must be rubbed, lay it on a piece of white cloth, and rub both together between the hands. Boil it in a bag to protect the delicate fabric; or, if not very much soiled, pour an abundance of absolutely boiling water over it and let it stand. Rinse the material well, blue it, and put it into the thin, hot starch. Squeeze it out, and lay it between cloths for a few moments to absorb the moisture. Shake out the material, and pat or clap it between the hands until it is dry enough to iron. Pull it gently into shape, put it on the table, and iron it on the right side unless it is embroidered. The embroidery must be ironed on the wrong side over flannel, and then the muslin on the right. Being thin, the muslin will dry out quickly. Use a damp cloth freely, and leave each part dry, smooth, and free from wrinkles.

COLORED CLOTHES

The work of the dyer has improved until now almost all wash goods are considered fast in colors. However, this does not mean that they may be treated as you would treat white clothes. The dyes are of two kinds: substantive, those that combine with the material to be dyed, and adjective, those that attach themselves to, rather than combine with, the material. To the former class belong the wools and silks; to the latter, the linens and cottons. From the tough, resistant character of the linen and cotton fibres, we can understand that they will not readily take up color and that, if they do, they will part with it easily. Strong soaps, hot water, and even sunshine tend to weaken their color, so that the greatest care must be used in washing colored clothes, especially if the color is delicate. We know that most reds, pinks, and blacks are fast, but we are never sure of anything until we have washed a sample and dried it. If the color suffers, try to set it with a solution of salt, white vinegar, borax, alum, or sugar of lead (a strong poison). These may be used in the proportion of one level tablespoonful of any one of them to a gallon of water. None but a "neutral" soap must be used, and sometimes starch water rather than soap. The starch is very, very thin, and is used as you would use suds. Ordinarily, good results are obtained by following the directions given below:

Make a warm suds of Ivory Soap and water, and quickly wash, rinse, and hang out to dry one garment at a time. Should the water be colored by the goods, take fresh water for the next garment. Never rub soap on the goods, nor the goods on the board—except the edges of the hem if very

much soiled. Squeeze or rub it gently by hand. When clean, rinse it several times, until the last water is clear, and use acidified water if necessary. The use of alum water will make garments less inflammable. If you want to strengthen a blue, use bluing. Starch the garment at once in thin starch, after turning it wrong side out; shake it into shape, and hang it to dry in the shade. When dry, dampen and roll up the garment, but only a short time before ironing. Muslins, prints, and gingham should be ironed on the wrong side whenever possible, as it makes the material look like new.

HOSIERY

Merino, or ordinary woolen hose, as well as silk hose, must be washed according to directions given for washing flannels. Wash black or colored cotton hose in clean suds; otherwise, white particles will adhere to them. If the fastness of the color is in doubt, wash the foot first, holding the leg out of the water. Rub soap carefully on the foot, wash it, put in the entire stocking, wash quickly, turn it wrong side out, wash, rinse and wring it, stretch and shake it into shape, and hang it to dry. When nearly dry, iron on the wrong side with a warm (not hot) iron. Put the hand into the foot of the stocking and, as you draw out the hand, follow with the iron, or fold the stocking at the seam and iron flat. If stockings are embroidered the design must have no fold or crease in it.

WOOLS

Woolen material will easily shrink if carelessly handled. (See chapter on fibres for explanation of shrinking.) A "neutral" soap must be used, and if a soap claims to wash without shrinking, it does so only because you follow care-

fully the directions that come with the soap. Strong soaps or alkalies, except the milder ones—borax and ammonia—weakens the fibre and make it more liable to shrink. The rubbing on of soap of any kind is not desirable, because you must get it out, and it may require the rubbing of the material, which tends more than anything else to mat the wool and shrink the garment. Hot water and then cold must not be used, because heating expands the fibres, and as they lie so close together, they may interlock; then, when the cold contracts the fibres, they cannot unlock. As a consequence, the material shrinks. Extremes of temperature, then, are to be avoided.

Shake the dust out of the flannel. Make warm suds with Ivory Soap solution. Have it about 120° Fahrenheit, that is, so the hands can very comfortably be held in the water. If the garment is quite soiled, add a half tablespoonful of household ammonia for each gallon of water, and let the garment soak for ten minutes. Draw the garment through the hands, work it up and down, and squeeze it, but do not rub soap on it or rub it on the board. Put it through the wringer, turn the garment wrong side out and put it through a second suds the same temperature as the first. If any soiled spot does not yield to this treatment, lay it upon the table or other smooth surface, hold it straight, and rub it briskly with a small brush. If necessary, use a little soap solution on the brush. Rinse the garment quickly through several waters of the same temperature as the first water. If hard water is used for rinsing, soften it with a very little soap solution. Rinse flannel until the water is clear. Put it through the wringer or squeeze the water out; do not twist it. Shake it or hang it out to dry where it is warm. Never where it is

so hot that the garment will steam, or where it is cold. Guard against extremes of temperature. Stretch the garment into shape as it dries. This is especially true of ribbed underwear, which also does not need to be ironed. Press flannel when nearly dry, on the wrong side, until *perfectly* dry, using a moderately warm iron. Never have the iron so hot that the flannel will steam, and press, rather than rub it. Closely twisted and woven wool will shrink less than loosely woven materials.

Woolen dress goods of any kind must be washed as flannels are. Try first a sample, to see what treatment is necessary. Set the color, if it runs, and work quickly. Ammonia will usually brighten black goods. Wring loosely from one water to the other, and if the material wrinkles badly, take it from the last water without wringing, and hang it by the edge to dry. Put over the ironing sheet a cover of cotton cloth, fast in color and about the color of the material to be ironed. While yet damp, put the material on the table wrong side up, and iron till perfectly dry, with a warm (not hot) iron. Air the material, then roll, but do not fold it, and it will look like new.

BLANKETS

Select a warm, sunny, breezy day for washing blankets. First shake the dust out, then soak the blankets in warm suds of Ivory Soap for thirty minutes. Work them up and down in the water, squeeze them against the sides of the tub, and put them through the wringer, loosely adjusted, into another strong suds of the same temperature as the first. Stir about and soak for ten minutes, stretch soiled parts over a smooth surface, and rub with a brush, using a little of a solution of Ivory Soap cut up and dissolved in hot water.

Rinse in several warm waters—or until both blanket and water are clean—then hang to dry in the open air. Hang the blankets so that they will dry straight. When perfectly dry, rub the surface with a soft flannel cloth and hang them near a stove or in a warm room for several hours. For each pair of blankets allow a half cake of Ivory Soap.

SILKS

Silk fibre is smooth and shiny, and for best results requires the same treatment in the laundry as wool. If rubbed hard, the fibre is broken and the shiny effect lost. It should never be boiled.

Wash silk carefully in warm water, with Ivory Soap solution in it. Soak twenty minutes if necessary, and take fresh suds for the washing. Do not rub silk except with a soft nail brush over a smooth surface. Rinse in several warm waters until the last water is clear. Place between dry towels and put through wringer loosely adjusted, or squeeze water from it and hang to dry where you can watch it. When nearly dry, iron with a very moderate iron, until perfectly dry. If the iron is hot, the silk will be stiff. A thin muslin spread over the silk before ironing may give better results when material is thin. If silk is colored, it will be better to try a sample, and to set it as you would colored cottons, with salt or vinegar.

Silk Crape, or silk of fancy weave, that does not require ironing may be taken from the last water without wringing, spread straight and smooth upon a clean table and allowed to dry there. It will look like new.

Lay *Ribbons* out smooth upon the table and brush them with a nail brush dipped in soapy water. Brush both sides.

When clean, rinse without squeezing, and draw through the hands, and while quite wet, spread straight and true upon a clean, smooth surface to dry or iron when nearly dry under a cloth.

Wash *Chiffon* in soapy water, rinse carefully, clap dry, stretch into shape, and iron on the wrong side with a cool iron.

Wash *Silk-embroidered Linen* in Ivory Soap solution and water, rubbing soiled parts with a brush. Rinse till clear. If color is inclined to run, do not wring but lay between dry cloths and iron immediately. Always iron wrong side up over several thicknesses of flannel, to make the embroidery stand out. When dry, turn it onto the right side and iron the linen between the embroidery.

Silk-ribbed Underwear must be washed in warm Ivory Soap and water, to which a tablespoonful of household ammonia for each gallon of water has been added. It may be soaked for ten minutes, then quickly washed, rinsed, and dried. Do not iron it, but stretch it until it is soft.

Velvet to be renewed must be passed over steam and brushed lightly against the nap meanwhile. A device can be bought to attach to the nose of the teakettle, or steam can be produced by covering an inverted hot flatiron with several thicknesses of wet cloth over which the velvet is drawn.

LACES

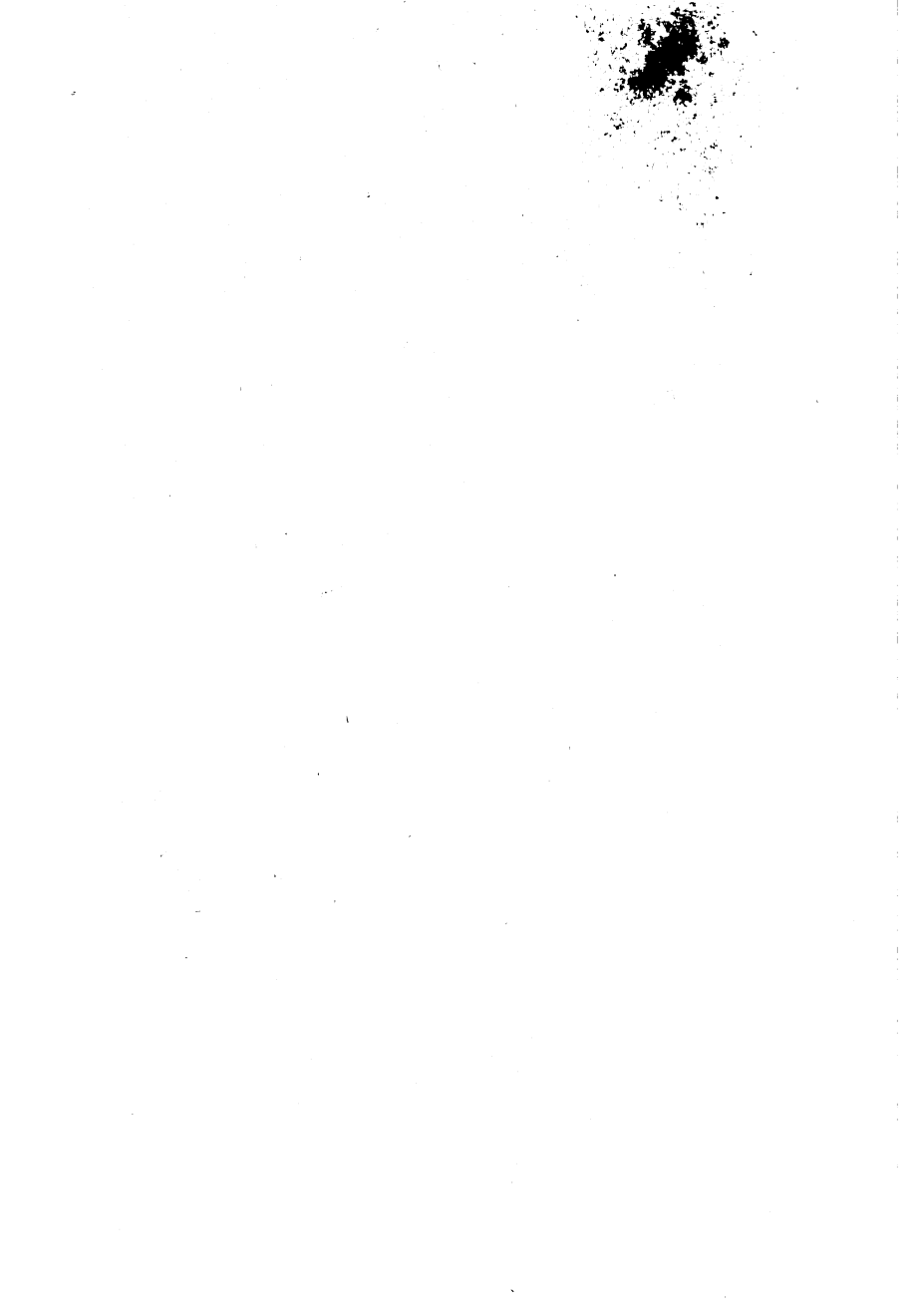
Real laces are rarely washed, because they thicken slightly, and require very careful handling to make them appear like new.

Wash *White Lace* in warm water with Ivory Soap and a little ammonia. Soak it for an hour, then use fresh water.

Do not rub, but squeeze the dirt out. If the lace is very yellow, put soapy water over it and set it in the sun for a day or two. When it is clean, rinse well. If you wish the lace cream color, add strong coffee to the last rinsing water. If you wish it white, add a little bluing. To give lace the body it had when new, stiffen it in gum arabic water, made by dissolving a piece of gum arabic the size of a pea in one half pint of boiling water. Lay the lace between cloths to absorb the moisture, clap it until nearly dry, pull it into shape, and pin it onto flannel straight and true. Be sure that each point is in shape and that every loop of the pearl edge has a pin to hold it in place.

Wash *Black Lace* in one cup of strong coffee to which one tablespoonful of ammonia has been added. Rinse it in gum arabic water, clap until nearly dry, and pin it into shape on flannel or iron under black muslin with a warm (not hot) iron.

Shake and brush *Lace Curtains* to remove the dust, soak them in soapy water over night. Work the curtains gently up and down in the water and squeeze them between the hands to get the dirt out. Put them into clean warm suds with ammonia added, and keep changing the water until the curtains are clean. Never wring curtains by hand; lay them on a strip of cloth and put carefully through the wringer. Rinse well in several waters, and put through hot, moderately thick starch. If the curtains are white, the starch should be blued; if cream color, strong coffee should be added to it. Pin each point carefully to the drying frame and set in the air to dry. Two or three curtains may be dried at the same time on one frame. If you have no frame, lay clean sheets over the floor of an unused room, stretch the curtains into shape, square and true, and pin each point so that it will not slip. If points are out of shape when dry, they may be dampened with a cloth and ironed.



THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

AN INITIAL FINE OF 25 CENTS

WILL BE ASSESSED FOR FAILURE TO RETURN
THIS BOOK ON THE DATE DUE. THE PENALTY
WILL INCREASE TO 50 CENTS ON THE FOURTH
DAY AND TO \$1.00 ON THE SEVENTH DAY
OVERDUE.

APR 7 1937

MAY 04 1937

APR 8 1937

APR 22 1937

MAY 3 1937

MAR 25 1933

MAY 7 1941 M

3 Dec '56 JN

REC'D LD

DEC 2 1956

YB

U. C. BERKELEY LIBRARY



C05801160

956819

TT985

V3

UNIVERSITY OF CALIFORNIA LIBRARY

